

What is claimed is:

1. A cyclic peptide selected from the group consisting of BP-1, BP-2, and mutants, homologs, derivatives, and variants thereof, wherein the peptide is capable of binding with HveA.
- 5 2. The cyclic peptide of claim 1, wherein the peptide inhibits binding of herpes simplex virus (HSV) gD with HveA.
3. The cyclic peptide of claim 1, wherein the peptide is BP-1.
4. The cyclic peptide of claim 1, wherein the peptide is BP-2
- 10 5. The cyclic peptide of claim 1, wherein the peptide inhibits entry of an HSV into a cell.
6. The cyclic peptide of claim 5, wherein the HSV is selected from the group consisting of HSV-1 and HSV-2.
7. A nucleic acid encoding a cyclic peptide of claim 1.
- 15 8. A method of inhibiting the ability of HveA to bind with HSV gD, the method comprising contacting HveA with a cyclic peptide selected from the group consisting of BP-1, BP-2, and mutants, homologs, derivatives, and variants thereof.
- 20 9. A method of inhibiting entry of an HSV into a cell, the method comprising contacting the cell with a cyclic peptide selected from the group consisting of BP-1, BP-2, and mutants, homologs, derivatives, and variants thereof, whereby entry of the HSV into the cell is inhibited.

10. A method of inhibiting replication of an HSV in a cell, the  
method comprising contacting the cell with a cyclic peptide selected from the group  
consisting of BP-1, BP-2, and mutants, homologs, derivatives, and variants thereof,  
wherein the peptide binds with cellular HveA whereby replication of the HSV in a  
5 cell is inhibited.

11. A method of treating a human infected with an HSV, the method  
comprising administering to the human a cyclic peptide selected from the group  
consisting of BP-1, BP-2, and mutants, homologs, derivatives, and variants thereof,  
10 wherein the peptide binds with HveA.

12. A method of producing a cyclic peptide which affects  
interaction between HSV gD and a HSV receptor protein which binds gD, the  
method comprising

- (a) preparing a random peptide phage display library;
- 15 (b) selecting phage that bind to one of HSV gD and HveA;
- (c) isolating the phage; and
- (d) isolating the cyclic peptide from the isolated phage,

whereby the peptide which affects the interaction between HSV gD and the HSV  
receptor protein is produced.

20 13. The method of claim 12, wherein the HSV receptor protein is  
selected from the group consisting of HveA, HveB, and HveC.

14. A cyclic peptide produced by the method of claim 12.

25 15. A cyclic peptide selected from the group consisting of BP-1, a  
fragment thereof, and a variant thereof, wherein the peptide binds with HveA and  
inhibits LT- $\alpha$  binding with HveA.

16. A method of inhibiting binding of HveA with LT- $\alpha$ , the method comprising combining a cyclic peptide and a preparation of LT- $\alpha$  and HveA, the peptide being selected from the group consisting of BP-1, a fragment thereof, and a variant thereof, wherein the peptide binds with at least one of LT- $\alpha$  and HveA and  
5 inhibits binding of HveA with LT- $\alpha$ .

17. A method of inhibiting binding of HveA with LT- $\alpha$ , the method comprising contacting HveA with a cyclic peptide selected from the group consisting of BP-1, a fragment thereof, and a variant thereof, wherein the peptide binds with HveA and inhibits binding of HveA with LT- $\alpha$ .

10 18. A method of producing a cyclic peptide which affects interaction between LT- $\alpha$  and HveA, the method comprising  
(a) preparing a random peptide phage display library;  
(b) selecting a phage that binds with at least one of LT- $\alpha$  and HveA;  
(c) isolating the phage; and  
15 (d) producing a cyclic peptide from the isolated phage,  
whereby the peptide which affects interaction between LT- $\alpha$  and HveA is produced.

19. A method of determining whether a test compound affects binding of HSV gD with HveA, the method comprising  
(a) making a first preparation comprising a surface having at least a portion  
20 of HveA bound thereon, the test compound, and a suspension of a phage in contact with the surface, wherein the phage displays a cyclic peptide selected from the group consisting of BP-1 and BP-2, and mutants, homologs, derivatives, and variants of BP-1 and BP-2;  
(b) assessing the amount of phage bound with the surface in the first  
25 preparation; and  
(c) comparing the amount of phage bound with the surface in the first preparation and the amount of phage bound with the surface in an otherwise identical preparation to which the test compound is not added,

whereby a difference between the amount of phage bound with the surface in the first preparation and in the otherwise identical preparation is an indication that the test compound affects the binding of gD with HveA.

20. A method of determining whether a test compound affects HSV  
5 gD binding with HveA, the method comprising

- (a) making a first preparation comprising a surface having at least a portion of HveA bound thereon, the test compound, and a cyclic peptide selected from the group consisting of BP-1 and BP-2, and mutants, homologs, derivatives, and variants of BP-1 and BP-2, in contact with the surface;
  - 10 (b) assessing the amount of the peptide bound with the surface in the first preparation; and
  - (c) comparing the amount of the peptide bound with the surface in the first preparation and the amount of peptide bound with the surface in an otherwise identical preparation to which the test compound is not added,
- 15 whereby a difference between the amount of the peptide bound with the surface in the first preparation and in the otherwise identical preparation is an indication that the test compound affects HSV gD binding with HveA.

21. A method of determining whether a test compound affects LT- $\alpha$  binding with HveA, the method comprising

- 20 (a) making a first preparation comprising a surface having at least a portion of HveA bound thereon, the test compound, and a suspension of a phage in contact with the surface, wherein the phage displays BP-1;
- (b) assessing the amount of phage bound with the surface in the first preparation; and
- 25 (c) comparing the amount of phage bound with the surface in the first preparation and the amount of phage bound with the surface in an otherwise identical preparation to which the test compound is not added,

whereby a difference between the amount of phage bound with the surface in the first preparation and in the otherwise identical preparation is an indication that the test compound affects LT- $\alpha$  binding with HveA.

22. A method of determining whether a test compound affects LT- $\alpha$   
5 binding with HveA, the method comprising

- (a) making a first preparation comprising a surface having at least a portion of HveA bound thereon, the test compound, and a BP-1 peptide in contact with the surface;
- (b) assessing the amount of the peptide bound with the surface in the first preparation; and
- (c) comparing the amount of peptide bound with the surface in the first preparation and the amount of peptide bound with the surface in an otherwise identical preparation to which the test compound is not added, whereby a difference between the amount of peptide bound with the surface in the first preparation and in the otherwise identical preparation is an indication that the test compound affects LT- $\alpha$  binding with HveA.